NEW PATENT APPLICATION
PRELIMINARY AMENDMENT

PATENT

REMARKS

The claims have been amended to avoid the 35 U.S.C. § 112, first and second paragraph, grounds of rejection as explained in the Advisory Action dated July 14, 1995, in parent application Serial No. 08/182,550.

The claims as amended are also believed to recite a biospecific assay method that is patentably distinct under 35 U.S.C. § 102 and 35 U.S.C. § 103 over the references cited in the art based rejections in the parent application. The arguments made in the response to the Final Action in the parent application are believed to be commensurate in scope with the claims (as amended herein) and reconsideration of these arguments is requested. Regarding the comparison in Appendix 5 to the response to the Final Action in the parent application, it can be seen from the comparison that the two methods are based on entirely different assay principles. In the conventional non-competitive immunoassay, all the analyte molecules in a fixed sample volume are attached to the immobilized antibody. In the occupancy method (Ekins) only a fraction of the analyte molecules is attached to the immobilized antibody, wherein the amount of bound fraction is dependent only on the analyte concentration in the sample (according to law of mass action) and independent on the amount of sample.

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In the event any fees are required, please charge our Deposit Account No. 01-0305.

Respectfully submitted,

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Please add the following new claims to the application:

-13. In a biospecific assay method comprising

- reacting microparticles coated with a bioaffinity reactant A which specifically binds an analyte to be assayed, a sample to be analyzed, and a labelled bioaffinity reactant B to cause said analyte and said labelled bioaffinity reactant B to specifically bind to said microparticles via the bioaffinity reactant A; and

- measuring signal strength from labelled bioaffinity reactant B bound to the microparticles to determine the analyte concentration in the sample, the improvement comprising:

- contacting a predetermined amount of said sample, a predetermined number of uniformly sized microparticles coated with said bioaffinity reactant A and said labelled bioaffinity reactant B labelled with a luminescent label such that, after the specific binding of the analyte in the sample to said predetermined number of uniformly sized microparticles, each individual microparticle emits a signal strength that corresponds to the analyte concentration in the sample , and

- determining the analyte concentration in said sample by measuring the signal strength from each of the individual microparticles using a measuring means capable of reading the luminescence from ~~single~~ each of the individual microparticles, the number of individual microparticles measured

being the minimum number that will provide a statistically reliable measurement of the signal strength, and comparing said signal strength with a standardization curve, wherein said standardization curve is a mean of the signal strength of said predetermined number of uniformly sized microparticles.

14. The assay method according to claim 13, wherein an increasing sample volume is employed.

15. The assay method according to claim 13, wherein a decreasing sample volume is used.

16. The assay method according to claim 13, wherein the assay comprises a competitive immunoassay, in which the labelled bioaffinity reactant B ~~is an antigen~~, and the bioaffinity reactant A ~~comprises~~ an antibody for whose binding sites the labelled antigen and an antigen of the analyte compete.

17. The assay method according to claim 16, wherein the amount of said predetermined number of uniformly sized microparticles coated with the antibody A is adjusted so that the lowest analyte concentration will result in the strongest signal.

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A 13 to recite @ least one analyte.

18. The assay method according to claim 13, wherein the microparticles used comprise a mixture of microparticles recognizing different analytes.--

Please amend claims 6, 7 and 10 as follows:

6. (Amended) The assay method according to claim 13, [redacted] wherein the assay [redacted] comprises a non-competitive immunoassay, in which the labelled bioaffinity reactant B ~~is~~ comprises an antibody ~~directed against~~ which specifically binds to [redacted] an ~~antigen of~~ the analyte.

7. (Amended) The assay method according to claim 13, [redacted] wherein the assay [redacted] comprises a nucleic acid hybridization assay, in which the labelled bioaffinity reactant B ~~is~~ comprises a nucleic acid probe which specifically hybridizes to the analyte

10. (Amended) The assay method according to claim 13, [redacted] wherein said luminescent label is selected from the group consisting of labels emitting fluorescence, time-resolved fluorescence, chemiluminescence [redacted] and bioluminescence.

5. The assay method according to claim 3, characterized by the use of a decreasing sample volume in the non-competitive assay and in the competitive assay.

6. The assay method according to claim 1, characterized by the assay being a non-competitive immunoassay, in which the labelled bioaffinity reactant B is an antibody directed against the antigen of the analyte.

7. The assay method according to claim 1, characterized by the assay being a nucleic acid hybridization assay, in which the labelled bioaffinity reactant B is a nucleic acid probe.

8. The assay method according to claim 1, characterized by the assay being a competitive immunoassay, in which the labelled bioaffinity reactant B is an antigen, and the bioaffinity reactant A an antibody, for whose binding sites the labelled antigen and the antigen of the analyte compete.

9. The assay method according to claim 8, characterized by the control of the amount of microparticles coated with the antibody A so that the lowest analyte concentration will result in the strongest signal, when measuring individual microparticles by the label technology used.

10. The assay method according to claim 1, characterized by the use of labels emitting fluorescence, time-resolved fluorescence, chemiluminescence or bioluminescence.

11. The assay method according to claim 1, characterized by the microparticles used being a mixture of microparticles recognizing different analytes, thus allowing the simultaneous assay of several analytes in the same sample.

12. The assay method according to claim 11, characterized